



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Here are then three various points of view offered for study—one, of Broili, that the form is a lacertian; two, that of Williston and Broom, that the form is a member of the true Caudata; three, the suggestion offered here that the form may be one of the Gymnophiona. In further support of the view of the gymnophionid character of the form is the snake-like character assumed by *Lyssorophus*. Case has noted that the vertebral column is usually coiled where there is any considerable portion of it preserved and Dr. Williston remarked to the writer of the same fact which he had observed in the field while in Texas the past summer. The palate structure of the *Lyssorophus* is against the idea of the form being a member of the Gymnophiona, at least so far as we know the palate; further knowledge of this structure will undoubtedly solve the problem.

Further study of the form will also reveal other facts as to its anatomy and we are hoping to hear much from the recent collections of Drs. Williston and Case from the Texas Permian.

Stegocephala.—In an endeavor to reach some definite conclusions in regard to the correct classification of the extinct Amphibia, investigators all over the world are issuing contributions on various phases of the subject. One of the more recent advances is a study of the vertebrae of the Carboniferous forms by Hugo Schwarz,¹ of Griefswald, Germany. He has studied the exact characters of the vertebrae of forms from the coal mines of Linton, Ohio, of which there are specimens preserved in Berlin and in Griefswald, and also specimens from Nürschan bei Pilsen. The work was done under the advice of Dr. Otto Jaekel and the paper shows a strong bias of Jaekel's views.

The methods of study adopted by Schwarz are the same as those proposed by Jaekel five years ago. The specimen is removed from the soft coal, in which it is imbedded, by chemicals and by mechanical means and an impression is made of the mold by wax, plaster or guttapercha. While most of Jaekel's results show that the methods have some advantages, yet it is to be doubted if they are the best in all cases. The interpretation of the material is a puzzle at the best, and when the elements are disturbed it is often very difficult to form any idea of their nature. Jaekel experienced this especially in his discovery of the "perisquamosal" in *Diceratosaurus*, a structure which does not exist in other species of this genus and was probably due

¹ *Beiträge zur Palæon. und Geol., Oesterreich-ungarns*, Bl. XXI.

to breakage in the form which Jaekel studied. Schwarz has, on the other hand, obtained excellent results, and his descriptions of the vertebræ of the various forms will be of great service to the student even though his conclusions are not accepted.

A new family "Ophiderpetontidae" is proposed to include the genera Ophiderpeton and Thyrsidium, the former of which was included in Lydekker's Dolichosomatidae. The family characters are solely those exhibited by the ribs and vertebræ. Under the heading of Ophiderpeton the author rediscusses the question of the "Kammplatten" and dismisses the subject with the remark "dass sie nichts mit den Stegocephalen zu tun haben." Herein he has committed an error, for Fritsch has distinctly figured² a nearly complete specimen of *Ophiderpeton persuadens* Fr. with the "Kammplatten" in place near the cloacal region of the animal. The whole question of the "Kammplatten" has recently³ been reviewed by the present writer. There is a great deal of uncertainty as to what the true nature of the "Kammplatten" really is. That they do occur in selachians as stated by Fritsch⁴ does not at all imply that they may not also occur in Ophiderpeton, and they certainly do occur here if Fritsch has correctly interpreted his specimen.

Schwarz adopts the two suborders Aistopoda and Microsauria for the "Holospondylen Stegocephalen," but does not seem to understand the differences which exist between these two suborders, and especially is this true when he includes the Ptyoniidae in the Microsauria, since Ptyonius and its allies are typical members of the group Aistopoda. There is really but little difference between the groups Aistopoda and the Microsauria structurally, and, as Schwarz suggests, they undoubtedly arose from the same stem much as did the lizards and snakes, but they are just as distinctly members of different groups as are the Lacertilia and Ophidia. No form is more typically an aistopod than the Ptyonius. The subordinal characters are found in the vertebræ, in the lack of limbs, the elongation of the body and especially in the attenuation of the skull with its concomitant structural differences.

The final conclusion attained by the author is that, with Jaekel, he would divide the Stegocephala into two groups, the

² Fritsch, 1901, "Fauna der Gaskohle," Supplement, Vol. IV, p. 89.

³ Biol. Bulletin, Vol. XIV, No. 4, 1908.

⁴ Sitzungsberichte der Boh. Gesell., 1905.

temnospondylous groups and the holospondylous group. In the first group he would place all the forms which possess rhachitomous, embolomorous and stereospondylous vertebræ, and in the second group the forms which are usually known as Aistopoda and Microsauria. He evidently excludes the Branchiosauria from the Stegocephala proper, in which the present writer heartily agrees.

The contribution is a distinct advance in the knowledge of the forms described and it is to be hoped that we may have more information on the European forms which have been only too little studied and described.

The Cotylosauria.—The anatomy of this peculiar group of reptiles has been further elucidated by the recent studies of Williston¹ and Broili.² Williston restudied the form first described by Cope under the name of *Parioticus incisivus*. The University of Chicago possesses a nearly complete skeleton of this form and from his studies of this specimen Williston reached the conclusion that the form belongs rather in the genus *Labidosaurus* and is a typical cotylosaurian. He has given detailed figures of the anatomy of the various portions of the skeleton and a restoration of the form in so far as it is known. Broili has also given a restoration of a species of *Labidosaurus*, *L. hamatus*. He has mounted the entire skeleton free. This was impossible in the case of the specimen studied by Williston. Broili's restoration is a welcome addition to the knowledge of the Cotylosauria, although I am sure the animal, were he alive, would prefer not to have such an awkward sway in his vertebral column. One of the peculiar things about the Cotylosauria is the absence of lateral line canals which might be expected to be present from the close resemblance in their organization to the Stereospondyli, in which these canals are well developed. Dr. Williston searched carefully for the canals, but without success. The presence or absence of the canals may, at some future time, be one of the chief distinguishing characters between the forms which we call reptilian and those we call amphibian.

As a postscript to his article on *Lysorophus*³ Williston has figured and described the ventral ribs of *Labidosaurus incisivus*.

¹ *Journ. Geol.*, Vol. XVI, No. 2, 1908.

² *Zeit. Deutsch. geol. Gesell.*, Bd. 60, H. 1, 1908.

³ *Biol. Bull.*, Vol. XV, No. 5, 1908.